

FLIGHT

The
AIRCRAFT
ENGINEER
&
AIRSHIPS

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

No. 732. (No. 1, Vol. XV.)

JANUARY 4, 1923

Weekly, Price 6d.
Post free, 7d.

Flight

The Aircraft Engineer and Airships

Editorial Offices: 36, GREAT QUEEN STREET, KINGSWAY, W.C. 2
Telegrams: Truditur, Westcent, London. Telephone: Gerrard 1828

Annual Subscription Rates, Post Free:

United Kingdom .. 30s. 4d. Abroad .. 33s. 0d.*
These rates are subject to any alteration found necessary under abnormal conditions and to increases in postage rates

* European subscriptions must be remitted in British currency

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DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:

1923	
Jan. 4	Lecture, "Metal Aeroplanes," by Prof. Junkers, before R.Ae.Soc.
Jan.	Algiers Aviation Competition
Jan. 11	Juvenile Lecture, "Testing Model Seaplanes," by R. A. Frazer, before R.Ae.Soc.
Jan. 12	Discussion, "Gliding and Gliders at Itford," at I.Ae.E.
Jan. 18	Lecture, "Flying Boats," by Maj. J. D. Rennie, before R.Ae.Soc.
Jan. 26	Lecture, "Wind Tunnel Work at the N.P.L.," by W. L. Cowley, before I.Ae.E.
Feb. 6-7	Third Air Conference at the Guildhall
Feb. 9	Lecture, "Seaplane Design," by W. O. Manning, before I.Ae.E.
Feb. 23	Lecture, "Aerofoils," by Dr. A. P. Thurston, before I.Ae.E.
Mar. 15	Entries close for Dutch Height Indicator Competition.
Apl. 12	Lecture, "Some Controversial Points in Aircraft Design," by F. T. Hill, before I.Ae.E.
May 11	Lecture, "Experimental Flying," by Maj. M. E. A. Wright, before I.Ae.E.
June 25-30	International Air Congress, London
June 30	R.A.F. Aerial Pageant
Aug. 6-27	French Gliding Competition, near Cherbourg
Dec. 1	Entries close for French Aero Engine Competition

EDITORIAL COMMENT.



ON January 1 Mr. Handley Page read before the Institute of Transport a paper on Air Transport and the developments which have taken place since aviation between England and the Continent started in August, 1919. The first part of the paper dealt briefly with the history of air transport, and outlined the main services which are being operated at the present time. The lecturer pointed out that on the London-Paris route passengers had shown a marked preference for travelling by British machines, some 75-80 per cent. using the British lines. While admitting that this preference might be caused to some extent by the fact that the majority of the passengers were either British or American, and consequently might prefer to travel by a company having English-speaking personnel, Mr. Handley Page thought that without doubt the primary cause for this preference was to be found in the greater regularity and reliability of the British services.

The lecturer pointed out that the greatest proportion of the cost of air transport, when the service was a small one, was formed by overhead expenses and general establishment charges, which could not be reduced below a certain amount. As the services expanded so would these charges decrease, and an increase in the size of the services by two or three times would not result in anything like a corresponding increase in running costs.

Mr. Handley Page then gave some interesting figures of cost, from which we quote a few. The average cost, he stated, of the twin-engined machines used on the London-Paris service was approximately 6s. per mile flown, or 3s. 6d. per ton mile. For the single-engined machine he arrived at a corresponding figure of 4s. 6d. to 5s. per ton mile.

In the twin-engined machine the fuel cost was approximately £4 per hour, or, assuming an average cruising speed of 80 miles an hour, 1s. per mile, corresponding to a cost of about 7½d. per ton mile. We think that these figures may come as somewhat of a surprise to many. The figure of 3s. 6d. per ton mile as the total cost might have been estimated, but that the fuel cost, which was at one time believed

to be somewhere in the neighbourhood of one-third of the total, should only be between one-fifth and one-sixth seems rather surprising. We do not presume to question Mr. Handley Page's figures, but merely express our astonishment.

What It Means

Accepting these figures as being sufficiently nearly correct, what does the fact indicate? It would appear to show that on the score of engine economy we have but little hope of being able to effect any great improvement. For instance, suppose for the sake of argument that the price of petrol and oil were suddenly halved, or that an engine were produced which used only half as much fuel and oil per horsepower per hour as do the present ones. Such an improvement, regarded purely as engineering progress, would be phenomenal. Yet its effect upon the total cost of running an air service would be almost negligible.

If, therefore, we are to have any hope of reducing the cost of air transport it seems that we must look in other directions for improvement. The first necessity, as Mr. Handley Page pointed out, is expansion of the services so as to reduce overhead charges. Yet the lecturer was convinced that also in other respects there was room for improvement. Thus he stated that, although with present machines the average power loading was 15 to 17 lb./h.p., out of which but 4 or 5 lb./h.p. was paying load, it should not be impossible within the next few years to increase the total carrying capacity to 25 lb./h.p., and obtain a paying load of 10 lb./h.p. How this vast improvement was to be effected the lecturer did not state, but he estimated the cost per ton mile, resulting from such improvement, at 1s. 6d. instead of the present 3s. 6d. On the London-Paris route this would mean a cost of £18 per ton, or £1 10s. per passenger and 1½d. per lb. of freight. It would be interesting to know exactly how these figures were arrived at. Aerodynamic improvements in machines would seem to require to be of a rather startling character before we could hope to double the paying load carried, even if coupled with a certain amount of reduction in structure weight.

Mr. Handley Page also referred to the matter of subsidies, but as our own views on this subject have been stated over and over again, we do not propose to enter upon a discussion here.

Allied Aircraft and Germany

The question of Germany's position in the matter of aircraft rights and obligations is very much to the fore at the moment, owing to the fact that January 1, 1923, was the date upon which was terminated the clause of the Treaty of Versailles dealing with the right of the Allies to fly their machines over and land on German territory. The clause—Article 320, to be exact—fixing the date of January 1, 1923, had a proviso to the effect that the Allied rights should terminate on this date unless Germany had, in the meantime, been admitted to the League of Nations, or had been authorised to adhere to the International Air Convention.

Now it appears that Germany never has attempted to become a party to the I.A.C., and the question therefore arises what is her position as regards International aviation. The situation is not without

its humour, as evidently when the Treaty of Versailles was drawn up it was taken for granted that Germany would want to become a party to the I.A.C., or else would join the League of Nations. Germany has not expressed the desire to do either, and consequently the time limit for her obligations was reached on January 1. Realising that something would have to be done, as obviously Germany could not be allowed to stand aloof from the I.A.C., the Conference of Ambassadors, at which the representatives of France, Italy and Great Britain are stated to have been in complete agreement, summoned, in a note of December 19, the German Government to adhere to the Convention. In the German reply to this note it was stated that the Reich would accept this invitation in principle, but that it would demand certain supplementary information on technical points. On December 31 the Conference of Ambassadors replied to the effect that the question of supplementary information would be dealt with later, but that in the meantime it would consider German adherence in principle to the International Air Convention to mean that Allied aeroplanes had the right of free passage over German territory.

There the matter appears to rest at the moment. What will happen when Germany has received the additional technical information asked for still remains to be seen. It would appear that if Germany refuses to become a signatory to the I.A.C. there is nothing to compel her to do so. Any country has the right to decide for itself whether or not it is to its advantage to join.

We think, however, that Germany is not likely to take such a foolish attitude. No country in the world can afford thus to cut itself off from aerial communication with its neighbours, nor is there any reason to think that Germany really wishes to stand out. She may have had several reasons for refusing to have any dealings with the I.A.C. while herself under a number of restrictions, but once a state approaching more to equality has been reached Germany would be cutting off her nose to spite her face by holding aloof. Much as it is to the interests of Great Britain and France to have the right to fly across Germany, it is even more to the interests of Germany that she should be allowed to fly her machines to these countries. That this is so will be realised when it is pointed out that in the case of France and this country routes are possible which, by making a detour, would avoid Germany altogether, but in the case of Germany failure to come to an agreement with the Allies would mean the hemming in, to a serious extent, of German air services.

The very fact that representatives of one of the most powerful German groups are at present in this country in order to negotiate with Daimler Hire for the common operation of an air line between London and Berlin should be an indication that, in German aviation and financial circles at any rate, it is not expected that Germany will refuse to come into line. Which is all to the good of progress. As we have said repeatedly in these columns, no nation can afford to cut adrift from its neighbours altogether, and it is a very short-sighted policy to attempt to isolate any nation, more especially a great and powerful nation. We have the best hopes that a mutually satisfactory arrangement will be found possible, and that 1923 will see the beginning of real international aviation, the only form which is likely to amount to anything.



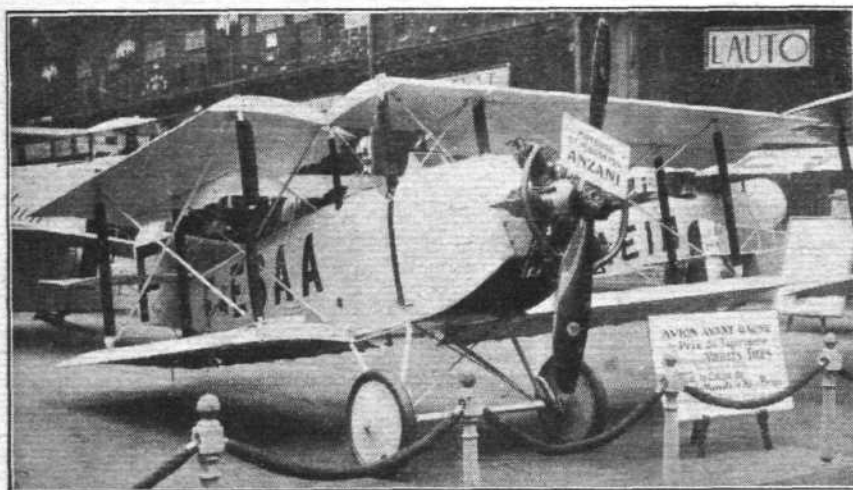
By THE TECHNICAL EDITOR

*(Continued from page 786.)***CAUDRON**

No firm has a greater number of machines on view than the Caudron, six complete machines being shown, ranging from the old G.3 with skids and open tail girder to the three-engined passenger carrier, C.61. The G.3 is too well known to need any description here. Suffice it to state that it forms the first step in a carefully-graded course of instruction. From the G.3 the pupil goes on to the second school machine shown,

construction it follows usual Caudron practice, and there is little to be said about it except that it is of quite pleasing lines and should be very economical to run.

The second sports model, the C.68, is slightly larger, and is a two-seater with six-cylinder 45 h.p. Anzani engine. The wings are made to fold, and the divided strut incorporated in the arrangement for folding is shown in the accompanying sketch. The operation of spreading or folding the wings can



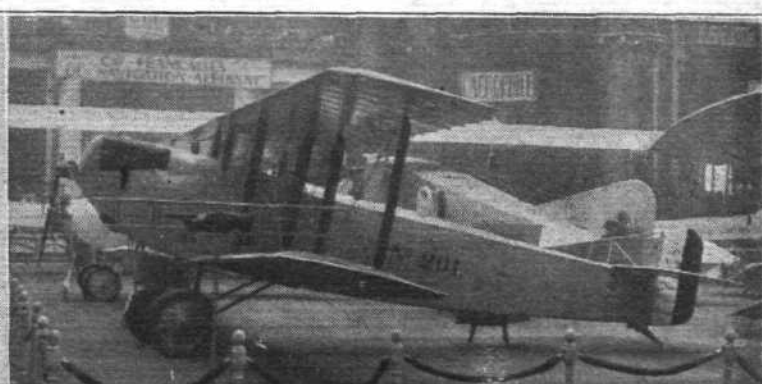
TWO CAUDRON SPORTING TYPES : On the left the 45 h.p. two-seater, and on the right the 35 h.p. single-seater.

the C.27, which is a two-seater tractor biplane with 80 h.p. le Rhone engine. Finally he is transferred to the C.59, a two-seater tractor biplane with 180 h.p. Hispano engine. There is nothing of special interest in either of these machines, which are plain, straightforward biplanes of usual design and construction.

Two sports models are shown, of which one, the C.67, is a small single-seater with 30 h.p. Anzani engine. In detail

be performed in about four minutes, and the control cables to the ailerons are so arranged that they are not interfered with by folding the wings. A special attachment for the tail skid prevents the wings from touching the ground when folded, and serves as a support when the machine is being trailed behind a motor-car.

The three-engined C.61 is in the main similar to that shown last year, but certain improvements have been incorporated,



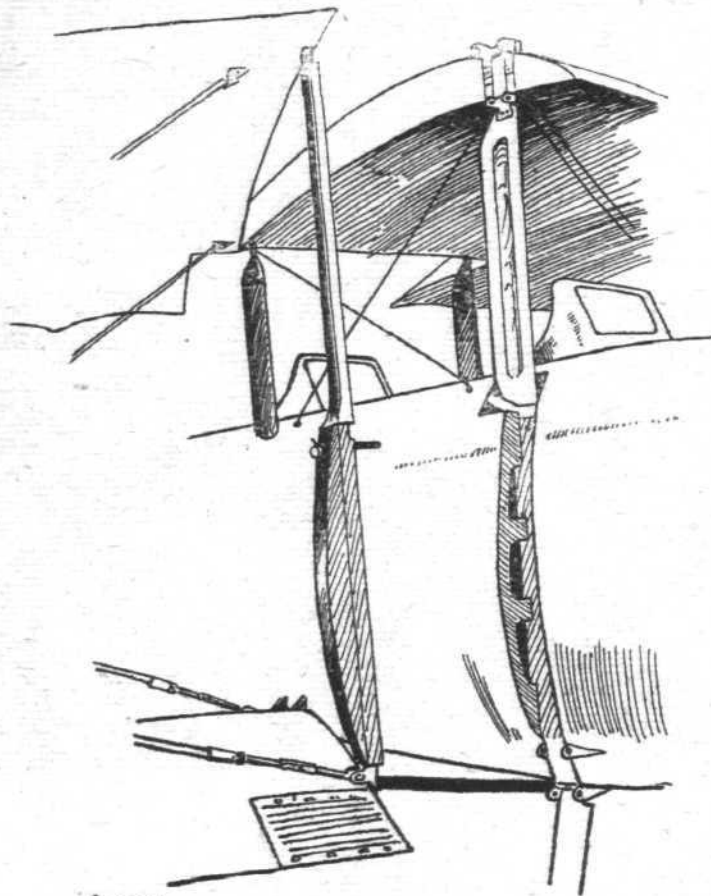
TWO CAUDRON SCHOOL MACHINES : Left, the 80 h.p. le Rhone machine ; and right, the Hispano-engined biplane.

chief of which is the placing of the petrol tanks in the top plane instead of under the passengers' seats, where their presence would have been a constant source of danger.

The cabin of the C.61 accommodates eight passengers, and it is of interest to note that the lower portion of the fuselage is formed into a series (11) of watertight compart-

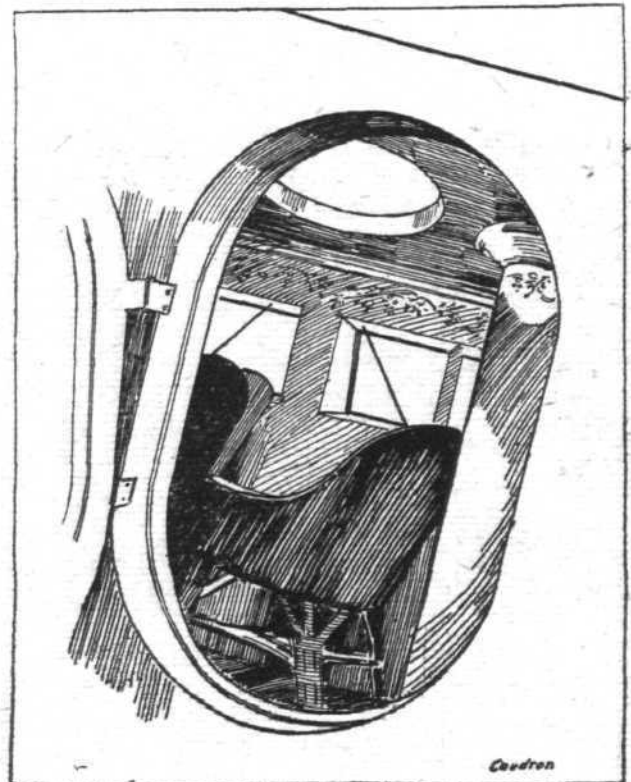


A Caudron Veteran: The type G.3, on which so many of our war pilots received their first tuition.



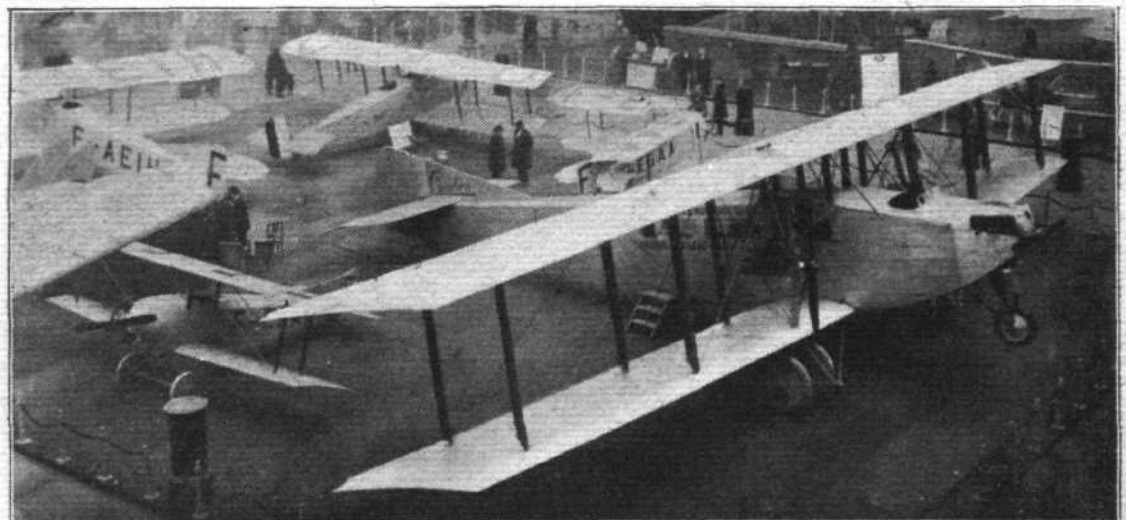
A divided strut is used in the Caudron sporting two-seater in connection with the wing-folding gear. When the wings are open the strut rests in a slot in the side of the fuselage.

ments sufficient to keep the machine afloat in case of a forced descent on the sea. Several of these machines have been bought by M. Latécoère for the Marseille-Casablanca route, which entails crossing the Mediterranean. As a matter of fact, with three engines, any two of which are capable of keeping the machine aloft, the chances of a forced landing on



A peep into the cabin of the Caudron three-engined machine.

The Caudron three-engined machine, photographed from the gallery.



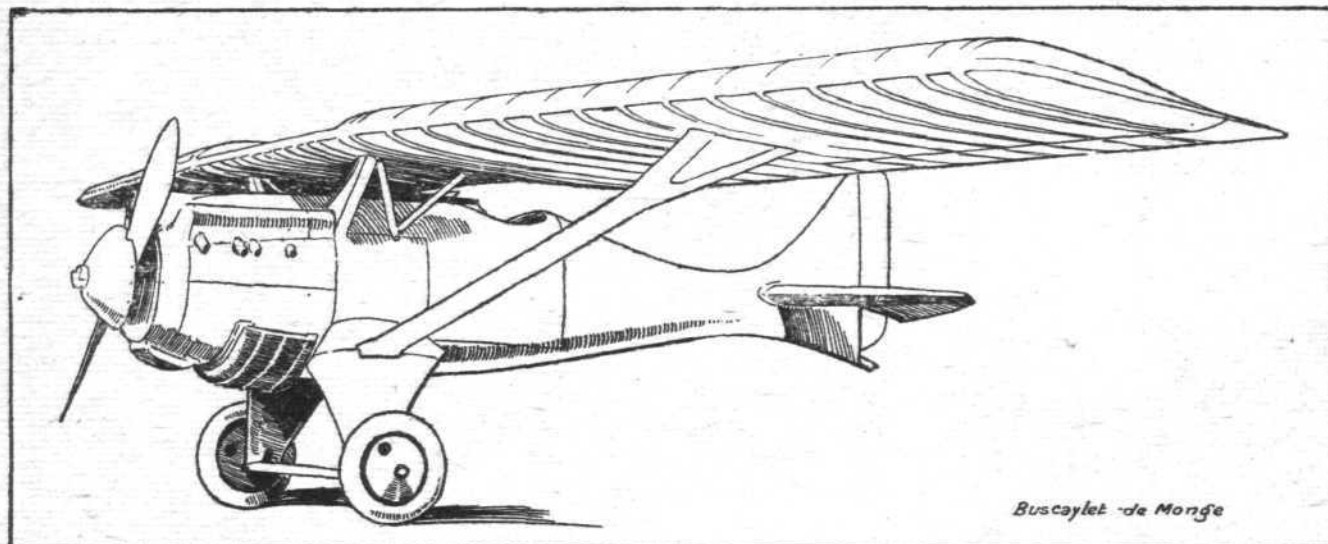
the sea should be very remote. Incidentally, it is not without interest to mention that, in addition to the six Caudron C.61 machines ordered by Latécoère, two more were purchased on December 19 by another firm. We wonder if any other firm can show similar results.

DE MONGE-BUSCAYLET, ISSY-LES-MOULINEAUX

The machine exhibited by M. Louis de Monge suffers from being placed in a very unfavourable position underneath the gallery, forming in this respect the "opposite number" of the Handley Page. And about both machines it may be said that they were deserving of a more prominent position. It would appear that both were late in applying for space, and that consequently all the large stands had been allocated. The de Monge machine, designed by M. L. de Monge, and constructed by Buscaylet et Cie., is a parasol monoplane chaser, known as the type "52 C-1." It is built almost

it appears that a very great number of set-screws would need to be undone before one could get at the engine. A feature of the engine housing is that it is entirely closed in front, the propeller shaft projecting through a small opening. On the front of the airscrew, which, incidentally, is one of the all-metal adjustable pitch Lumière-Leitner-Watts propellers, built in France under licence, is a small spinner carrying the lines of the fuselage into a neat streamline head. The covering of the fuselage, up to the point aft of the pilot's seat, where the monocoque construction begins, is covered with sheet Duralumin.

The undercarriage struts are in the form of box members built-up from Duralumin sheet. Their shape is indicated in some of our sketches. At the top, the "legs" of the undercarriage are joined to the main fuselage bulkheads by transverse hinges, while at the lower end they carry the rubber shock-absorbers and axle. An anti-bouncing device,



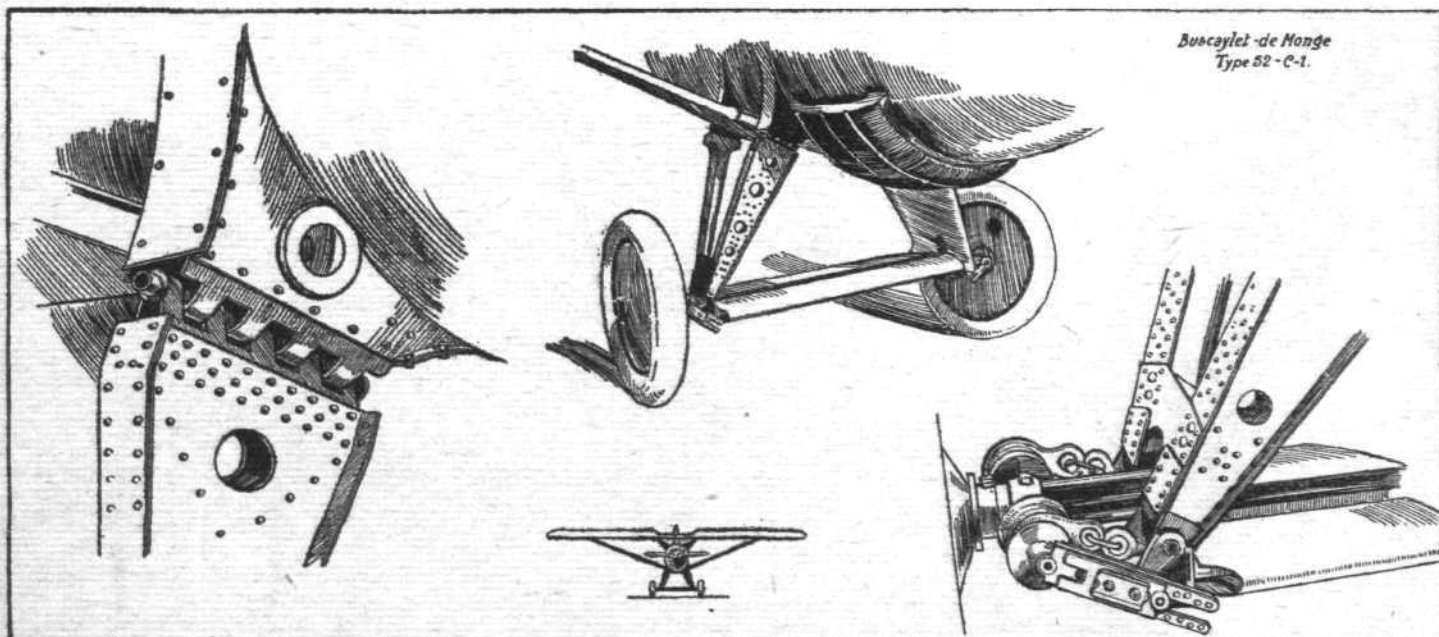
THE DE MONGE-BUSCAYLET MONOPLANE : This machine is built entirely of metal, mostly Duralumin, with the exception of the rear portion of the fuselage, which is a wood monocoque.

entirely of metal, chiefly Duralumin, the only exception being the rear portion of the fuselage, which is of monocoque wood construction.

The front portion of the fuselage is built-up of box formers or bulkheads of sheet Duralumin, reinforced by internal diagonal members. Carried on cantilever bearers, also of Duralumin, projecting forward from the front bulkhead is the 300 h.p. Hispano-Suiza engine, which is entirely cowled-in, so much so that it was suggested that the only way to get at the engine for any adjustments would be by means of a tin opener. The cowling certainly makes for clean lines, but

in the form of a friction damper, is incorporated, and is indicated in a sketch. It will be noticed that the axle is "floating" in its slot, the shock-absorbers sloping upwards and outwards from their attachment.

The centre-section of the wing is carried on struts of a construction similar to that of the undercarriage, at any rate, as regards the front spar. The rear spar is supported on Duralumin circular section tubes, and the structure is braced fore and aft by diagonal tubes, forming a letter N in side view. As exhibited, the box struts were uncovered, but it is, we believe, intended to cover the box strut and sloping



THE DE MONGE-BUSCAYLET, TYPE "52 C-1" : The upper sketch shows the undercarriage, while on the left and right are shown upper and lower ends of the undercarriage box struts. Note the friction device which acts as a damper gear. The small inset shows the front elevation of the machine, with thin centre-section. The wings have a very pronounced sweep back.

strut in a common casing, thus leaving an opening between the sloping strut and vertical rear strut through which the pilot can look. If the entire structure were covered-in, the view would be rather severely restricted.

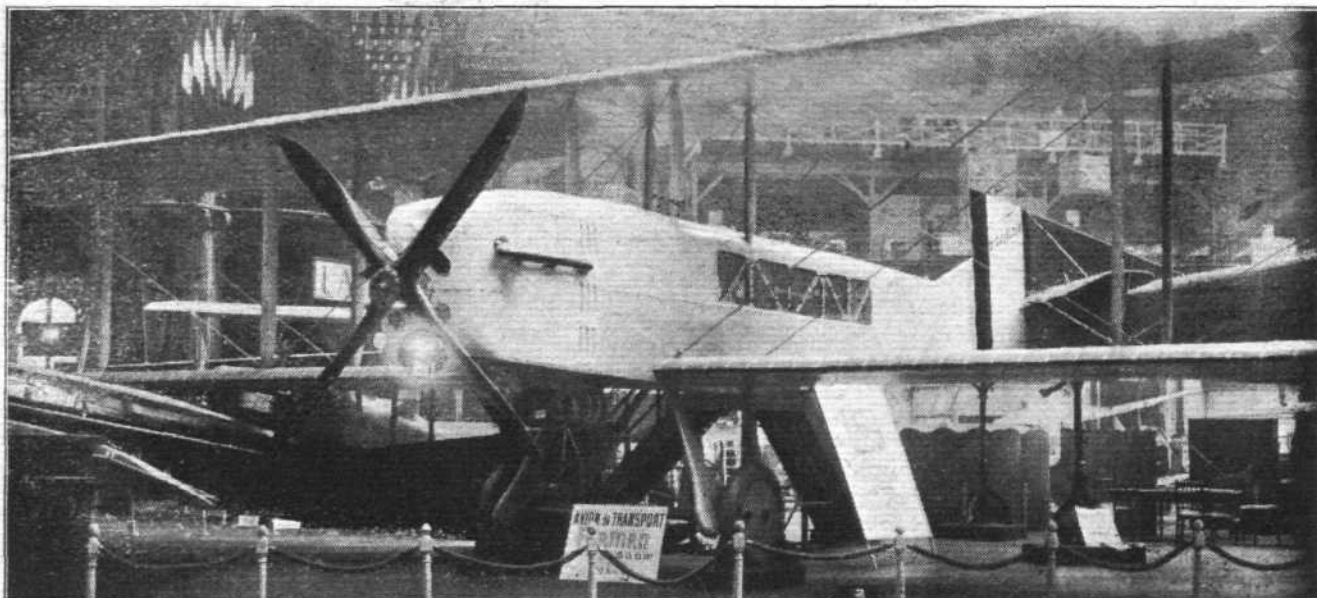
Constructionally, the wing is of Duralumin, with built-up box spars and ribs, the latter being made from metal varying from $\frac{1}{2}$ mm. to 1 mm. in thickness. A specimen rib was shown, which was certainly very light, and appeared to be reasonably rigid. Inserted into this rib were short spar stumps, and one presumes that these represented the actual spar construction. If this be the case, it would appear that the spar construction is not all that it might be, being built-up of two vertical sides riveted to channel-sections top and bottom. The feature which appears open to criticism is that the channels have their open side facing outward. Thus, while riveting is undoubtedly facilitated, the edges of both flat sides and channels are at the maximum distance from the neutral axis, i.e., at the point of maximum stress. In this country, it has been found that, in order to obtain full advantage of the metal used, no edges should be near the top and bottom of the spars, but should be turned in towards the neutral axis. It is possible, however, that in the actual wing some additional material is added, in which case this criticism might fall away.

In plan view, the fabric-covered wing has a pronounced sweep back, and it is braced by one large strut on each side, forked at its outer end to meet the spars, and secured on the fuselage to an enormous fitting of Duralumin, hinged to the two main bulkheads which also carry the undercarriage

together, and thus reduce the turning couple set-up when one side engine stops. The de Monge "72" will have the following dimensions:—Span, 32 ms. (105 ft.); length, 15.2 ms. (50 ft.); height, 4.15 ms. (13 ft. 7 ins.); wing area, 210 sq. ms. (2,260 sq. ft.). The engines to be fitted are Lorraine-Dietrichs of 375 h.p. each, giving a total of 1,125 h.p. With a total loaded weight of 20,000 lbs., and fuel sufficient for a radius of action of 600 miles, the useful load is estimated at 3,000 kgs. (6,600 lbs.) or 30 passengers. The estimated maximum speed is 220 kms. (137 miles) per hour, and the landing speed, 85 kms. (53 miles) per hour. For shorter distances, the useful load could, of course, be increased, and the amount of fuel carried decreased. Even with the long range, however, the power expenditure is only 37.5 h.p. per passenger carried, which is extremely good. We trust to be in a position to keep our readers informed of the progress of this machine, which has many unusual features, and which, if it comes even approximately up to the estimated figures, would appear to mark a considerable improvement.

H. AND M. FARMAN, BILLANCOURT (SEINE)

Of the three machines exhibited by Farmans, the most interesting was, perhaps, the little cantilever monoplane two-seater touring 'bus. The large commercial machine, with a power expenditure of 600 h.p. for 8 passengers, would not appear to be very "commercial," and the bomber was of usual design, except that it was built entirely of metal. As, however, the gentleman in charge of the stand flatly refused our representatives permission to make any sketches,



The Farman "Commercial" biplane carries eight passengers, and has an engine of 600 h.p.

and centre-section struts. In order to improve the view forward, the centre-section of the wing has been made much thinner than the end pieces, so that the pilot can look both over and under the wing. The wing section used is bi-convex, with a slight negative camber on the underside.

A Lamblin radiator of special design is secured to the "throat" of the fuselage, just in front of the undercarriage front struts. Just ahead of this radiator is a small oil cooler, also evidently of Lamblin production.

The main dimensions of the de Monge "52 C-1" are as follows:—Length 7 ms. (23 ft.); span, 10.9 ms. (35 ft. 9 ins.); wing area, 24 sq. ms. (258 sq. ft.); total loaded weight, 1,350 kgs. (3,000 lbs.); power loading, 10 lbs./h.p.; wing loading, 11.6 lbs./sq. ft. The estimated performance is: Speed at ground level, 270 kms. (168 miles) per hour; at 2,000 ms. 260 kms. (161 miles) per hour; at 4,000 ms. 250 kms. (155 miles) per hour; at 6,000 ms. 230 kms. (143 miles) per hour; ceiling, 7,500 ms. (24,600 ft.); landing speed, 105 kms. (65 miles) per hour.

In addition to the full-size machine, M. de Monge exhibited a scale model of a commercial three-engined monoplane which he has designed, and which is now in course of construction. This machine is to be without fuselage in the ordinary sense of the word, the passengers' cabin being formed by the thick centre-section of the wing. Two narrow fuselages or tail booms, project back from the wing engines, and a third engine is mounted centrally. By fitting three-bladed airscrews, of the Lumière-Leitner-Watts type, of small diameter, it has been possible to keep the engines very close

together, and thus reduce the turning couple set-up when one side engine stops.

The Farman monoplane is, perhaps, somewhat less displeasing to the eye than the majority of Farman machines, but even so it is by no means a pretty machine. The short span and great length, coupled with the very pronounced taper of the wings, gives it a very peculiar appearance, which is not improved by the low placing of the wings, à la Junkers. The machine is built entirely of wood, with the exception of the engine mounting and cowling, and, of course, of the fabric covering.

The fuselage is of rectangular section, and the wing roots are built-up as an integral part of it, being faired into the flat sides of the fuselage. The engine housing is kept very low, and as a glass top has been added to the cabin, the pilot can look out over the top of his engine fairly well. A feature which we do not like very much is that, in order to get into or out of the cabin, the occupants appear to be obliged to hold on to a couple of exhaust pipes running along the sides of the cabin. After the engine has been running some little time, this might prove annoying. Also, if the machine should turn over on landing, it would seem that it might be difficult for the occupants to emerge.

The wing, as already stated, is a cantilever monoplane, built in three sections, of which the centre section remains in place on the fuselage, while the two end pieces can be quickly detached. The wing is of great thickness and extremely large chord at the body, tapering rapidly both in chord and thickness towards the tips.

follows:—Length, 10.7 ms. (35 ft. 1 in.); span, 17 ms. (55 ft. 10 ins.); area, 63 sq. ms. (678 sq. ft.); weight empty, 1,360 kgs. (3,000 lbs.); fuel, 420 kgs. (925 lbs.); useful load, 680 kgs. (1,500 lbs.); total loaded weight, 2,400 kgs. (5,280 lbs.); power loading, 14.3 lbs./h.p.; wing loading, 7.8 lbs./sq. ft. No performance figures are available, except that the estimated speed is 185 kms. (115 miles) per hour.

The Farman Commercial machine, as already mentioned, does not impress one as being a very "commercial" proposition, with its power expenditure of 600 h.p. for the transportation of but eight passengers. The machine is stated to have been designed for the new Farman 600 h.p. engine. With the exception that but one engine is fitted, in place of the usual two on the wings, the new machine hardly appears to differ from the "Goliath." It shows the same straight wings with sawn-off ends, and the same rectangular flat-sided fuselage. The dimensions may vary slightly, but in general appearance the machine, except for the change in power

plant arrangement, is to all intents and purposes a "Goliath." The cabin is most luxuriously equipped, and folding tables are provided for each of the eight passengers. The seats can even be pulled out to make couches on which the weary passengers, if there be not too many of them, may rest full length. As, however, the amount of fuel carried is only sufficient for 5 hrs., this should scarcely be necessary, and a sounder plan might have been to arrange for carrying another five or six passengers.

The main characteristics of the machine are:—Length, 15 ms. (49 ft. 3 ins.); span, 25.3 ms. (83 ft.); area, 150 sq. ms. (1,615 sq. ft.); weight, empty, 3,000 kgs. (6,600 lbs.); fuel for 5 hrs. 620 kgs. (1,365 lbs.); useful load (pilot, mechanic and 8 passengers), 960 kgs. (2,110 lbs.); total loaded weight, 4,580 kgs. (10,000 lbs.); power loading, 16.6 lbs./h.p.; wing loading, 6.2 lbs./sq. ft.; speed 180 kms. (112 miles) per hour.

(To be continued.)

NEW YEAR HONOURS

It is announced in a Supplement to the *London Gazette*, that the King has been pleased to signify His Majesty's intention of conferring the following Honours:—

Knighthood

Manville, Edward, Esq., J.P., M.Inst.E.E., M.P. For services to the Board of Trade.

Royal Victorian Order

Atholl, John George, Duke of, K.T., C.B., D.S.O., M.V.O.

Order of the Bath

C.B. (Military Division)

Masterman, Air-Commodore Edward Alexander Dimsdale, C.M.G., C.B.E., A.F.C., R.A.F.

Bonham-Carter, Group Capt. Ian Malcolm, O.B.E., R.A.F.

C.B. (Civil Division)

Webster, James Alexander, Esq., D.S.O., Principal Assistant Secretary, Air Ministry.

Order of the British Empire

O.B.E. (Military Division)

Butler, Squadn.-Leader Albert James, M.C., A.F.C., R.A.F.

Smart, Squad.-Leader Harry George, D.F.C., R.A.F. (dated December 30, 1922).

M.B.E. (Military Division)

Brown, Flight-Lieut. Horace George, R.A.F.

Cullen, Flight-Lieut. Ian, A.F.C., R.A.F. (dated December 30, 1922).

Oakey, Flight-Lieut. Wesley Howard, R.A.F.

Wynne, Flying Offr. Frederick Robert, R.A.F. (dated December 30, 1922).

Jackson, No. 402325 Sergeant-Major 1st Class Percy John, R.A.F.

AWARDS AND PROMOTIONS

Air Ministry, January 1, 1923

The King has been pleased to approve of the following awards to the undermentioned officers and airmen of the Royal Air Force:—

Bar to the Air Force Cross.—Flight-Lieut. Thomas Edward Barham Howe, A.F.C.

Air Force Cross.—Flight-Lieut. Edward Rodolph Clement Scholefield, D.C.M.

Air Force Medal.—No. 314986 Sergt. William Charles Whitfield.

Promotions

The undermentioned officers are promoted to the ranks stated, with effect from January 1:—

General Duties Branch

Group Captain to be Air Commodore.—Eugene Louis Gerrard, C.M.G., D.S.O.

Wing Commanders to be Group Captains.—Wilfrid Rhodes Freeman, D.S.O., M.C., Patrick Henry Lyon Playfair, M.C., Arthur Wellesley Bigsworth, C.M.G., D.S.O., A.F.C.

Squadron Leaders to be Wing Commanders.—Thomas Gerard Hetherington, C.B.E., Alan Howard Jackson, Owen Tudor Boyd, O.B.E., M.C., A.F.C., Justin Howard Herring, D.S.O., M.C., John Hugh Samuel Tyssen, M.C.

Flight Lieutenants to be Squadron Leaders.—Arthur John Capel, Ralph Towleron Leather, A.F.C., Vyvyan Arthur Hemming Robeson, M.C., John Henry D'Albiac, D.S.O., Francis Percival Dcn, George Brindley Aufrere Baker, M.C., Harley Alec Tweedie, O.B.E., A.F.C., Roy Maxwell Drummond, D.S.O., O.B.E., M.C., Arthur Hicks Peck, D.S.O., M.C., Arthur Noel Gallehawk, A.F.C.

Flying Officers to be Flight Lieutenants.—James Humphrey Butler, Charles Ronald Steele, D.F.C., Cyril Fraser Brewerton, D.S.C., Philip Herbert Mackworth, D.F.C., John McCreedy McAlery, Malcolm Dent Nares, A.F.C., Robert Sydney Pearce Bobby, Gilbert Formby Smylie, D.S.C., Louis George Paget, A.F.C., Gerald Ernest Gibbs, M.C., John Whitworth Jones, George Oswald Venn, Sylvester Lindsay Quine, M.C., Edgar Theodore Carpenter, A.F.C., Cedric Walters Hill, Paul Richard Tankerville, James Michael Isidore Camille Chamberlayne, A.F.C., Charles Robert Davidson, M.C., Lance Harold Browning, M.C., D.F.C., Ralph Edgar Meek, Lee Roy Lowerison Brown, D.F.C., Edric William Broadberry, M.C., John Potter, Tom Oswald Clogstoun, Henry Dunboyne O'Neill, A.F.C., Cuthbert Joseph Stanley Dearlove, Kenneth Cromar Tilman, Harney Lancelot Macro, D.F.C., Walter George Preston, D.F.C., Edward Irwin Bussell, James Huddart Dand, M.B.E., Henry Basil Pett, M.C., Henry Edward Walker, M.C., D.F.C., Arthur Harold Beach-Leslie Millington Iles, A.F.C., Jack Cottle, M.B.E., D.F.C., Anthony Lauderdale Paxton, D.F.C., Albert Oliver Lewis Roberts, D.F.C., Charles William Attwood, Gerald Mornington Bryer, A.F.C., Guy Yelverton Tyrrell, M.C., David Craik, D.F.C., Albert Frank Lang, M.B.E., William Elliot, D.F.C., Frederick Robert Wynne, Kenelm Arthur Lister-Kaye, Ivor Morgan Rodney, Claud Vernon Aristides Bucknall, John Whitford, George Stairs Napier Johnston.

Stores Branch

Squadron Leader to be Wing Commander.—William Robert Bruce, O.B.E.

Flight Lieutenants to be Squadron Leaders.—William Edgar Aylwin, O.B.E., Henry Lumsden Crichton, M.B.E.

Flying Officer to be Flight Lieutenant.—Henry Edwin Thomas Crocker.

Stores Branch Accountants

Flight Lieutenants to be Squadron Leaders.—Arthur Geoffrey Nevill Belfield, Herbert George Jones, Herbert Francis Fuller, James Leask Robertson.

Flying Officers to be Flight Lieutenants.—Ralf Harry Cleverly, Percy Jack Farmer, Harry George Bushell, Frank Owen Hall, Frederick William Arthurton, Geoffrey Noel Simon, Percival Hay, M.C., Walter Rodgers Westcombe, Kenneth Robertson Money, O.B.E., John Sullivan.

Medical Branch

Wing Commanders to be Group Captains.—Henry Cooper, D.S.O., B.A., Martin William Flack, C.B.E., M.B., M.A.

Squadron Leader to be Wing Commander.—Harold Edward, Whittingham, M.B., D.P.H., D.T.M.

Flight Lieutenants to be Squadron Leaders.—Joseph Mary Aloysius Costello, M.C., M.D., M.Sc., John Hutchinson Wood, M.C., M.B., D.P.H., Arthur James Brown, D.S.O.

Director of Music

Flying Officer to be Honorary Flight Lieutenant.—John Henry Amers.

THE King has been pleased to approve of the award of the Medal of the Military Division of the Order of the British Empire to the undermentioned, to be dated Dec. 28, 1922:—

No. 1287 Flight Sergeant James Kemp Tough, R.A.F. (To be dated December 30, 1922.)

No. 334286 Sergeant Frank Lowry, R.A.F.; No. 60056 Corporal (A/Sgt.) Herbert Sydney Allen, R.A.F.; No. 331463 Corporal William Victor James Bancroft, R.A.F.; No. 341282 Corporal Harry Bowick, R.A.F.

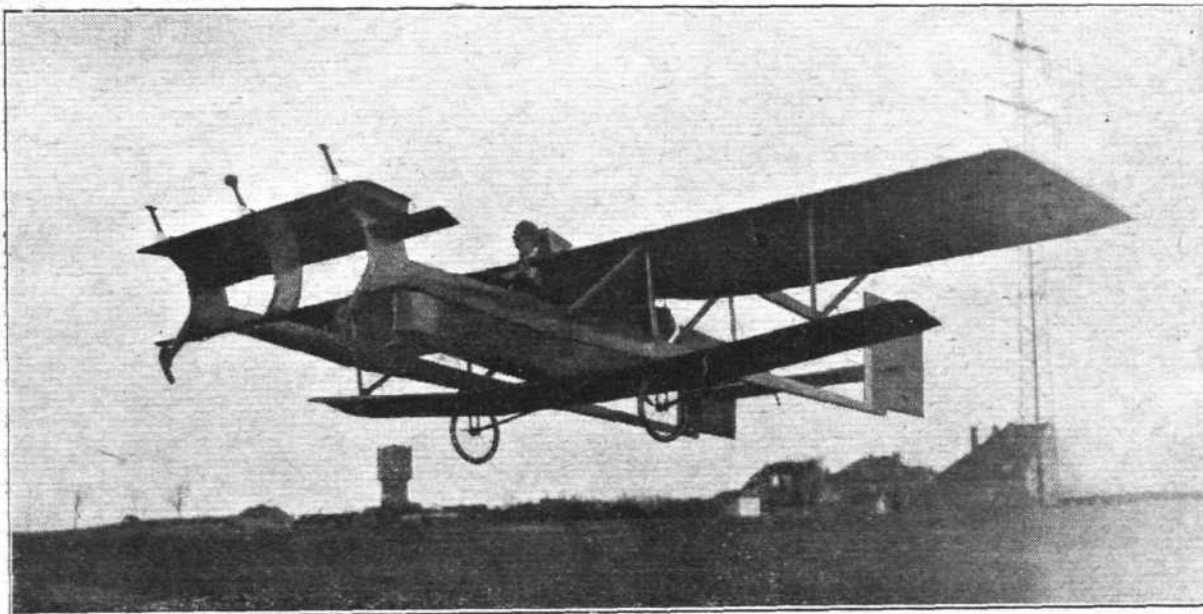
GLIDING, SOARING AND AIR-SAILING

Those wishing to get in touch with others interested in matters relating to gliding and the construction of gliders are invited to write to the Editor of *FLIGHT*, who will be pleased to publish such communications on this page, in order to bring together those who would like to co-operate, either in forming gliding clubs or in private collaboration.

SOME weeks ago, we announced in these columns that Gordon England's glider had been acquired by the gliding club formed at R.A.F. Staff College and Headquarters of

syndicate, the members of which are Squadron Leader Conran of No. 7 Group Headquarters, Squadron Leader Hunter of this Headquarters, and myself, for the purpose of purchasing the above-mentioned glider. Our object in this is to get as much amusement out of it as possible, and to make a careful record of results and conditions which are conducive to successful gliding.

"The glider has had to be rebuilt, and four new longerons spliced on. The elevator and aileron surfaces have been



THE BUDIG GLIDER IN FLIGHT, PROPELLED BY ITS 4 H.P. ENGINE : This machine was entered for the Rhön competition of 1921, but did not then do anything very startling.

No. 7 Group, Andover. On this subject, we have received from Flight-Lieut. H. Balfour, of No. 10 Group Headquarters, Lee-on-Solent, the following letter which should help to make the position quite clear.

* * *

Thus our correspondent: "I am writing to ask you if you will contradict an inaccurate report which has been published in several London papers and one aeroplane paper. This report is to the effect that Gordon England's glider has been purchased by No. 7 Group Glider Club.

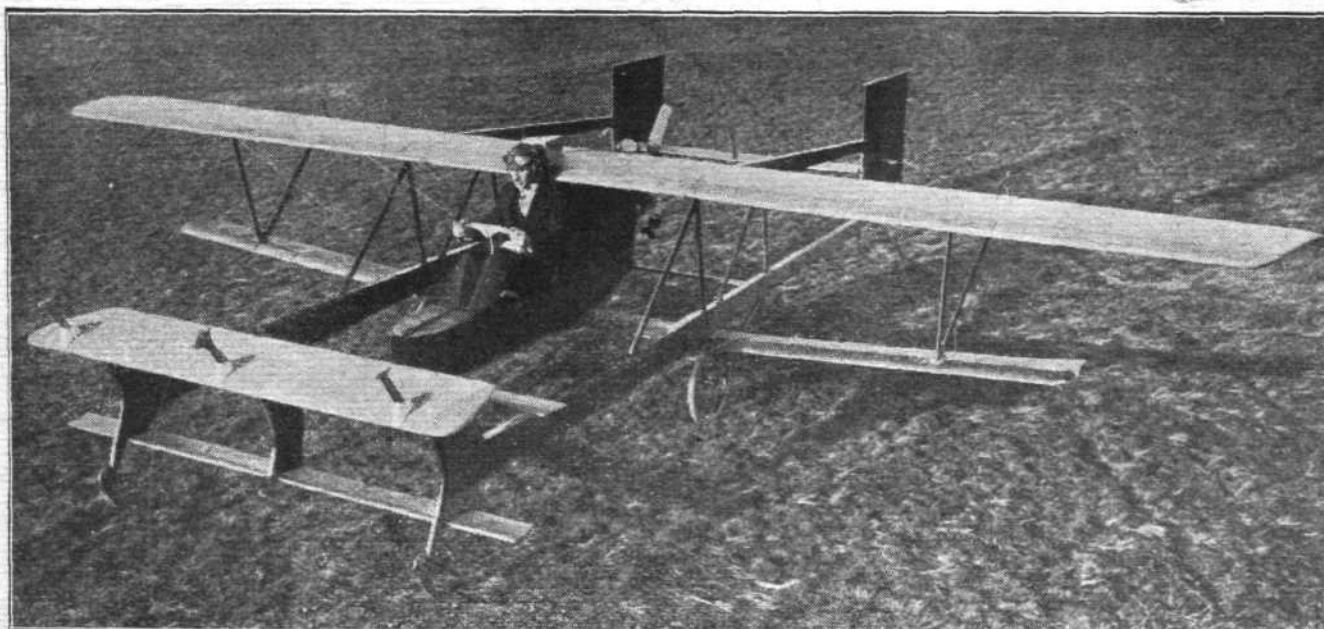
"The facts are thus: A month ago, after a few negotiations with parties concerned, I formed an entirely private

increased, and various other modifications carried out. It should be ready for trial next week.

"It is entirely our own show, financially and otherwise, and receives no official help or recognition, such as other clubs may have. We have no connection with the people 'next door,' or any other club or institution."

* * *

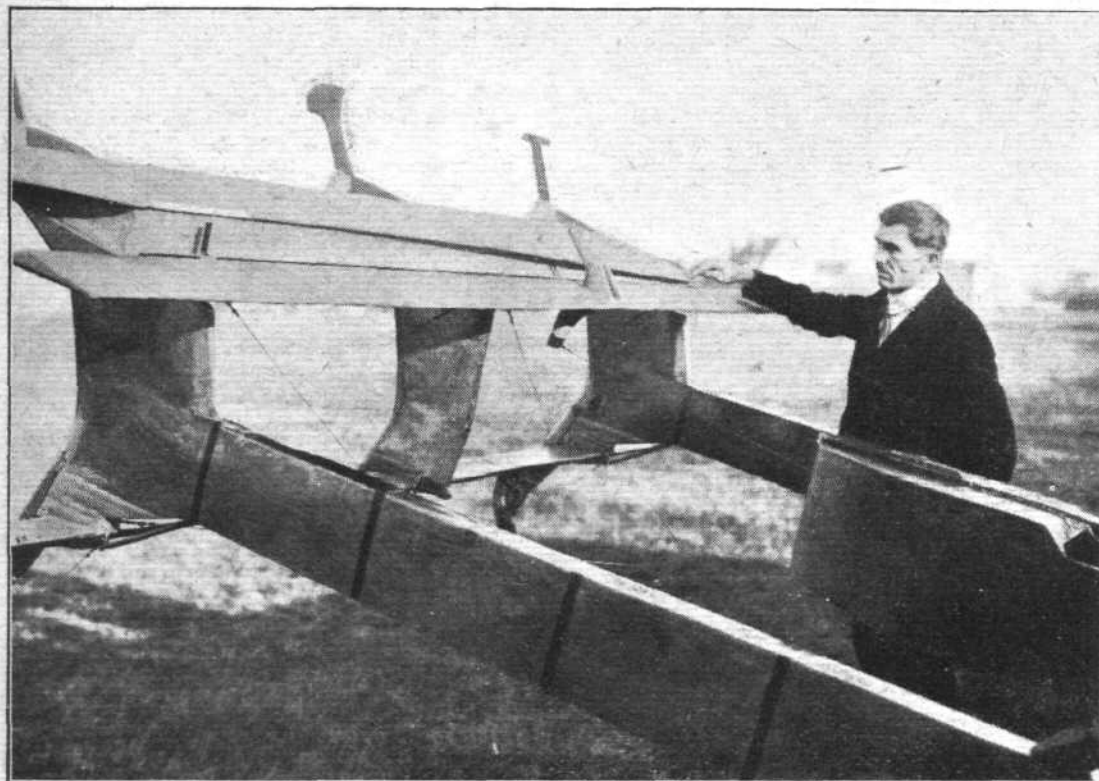
So that's that. With regard to the sentence dealing with "official help or recognition," we never intended to convey the idea that such were given; on the contrary, our paragraph stated that "In the meantime, the R.A.F. is taking up gliding unofficially already." We take this



THE BUDIG GLIDER WITH AUXILIARY ENGINE : Three-quarter front view from above. The machine has both front and rear elevators, and in addition the small leading plane is arranged to give automatic stability.

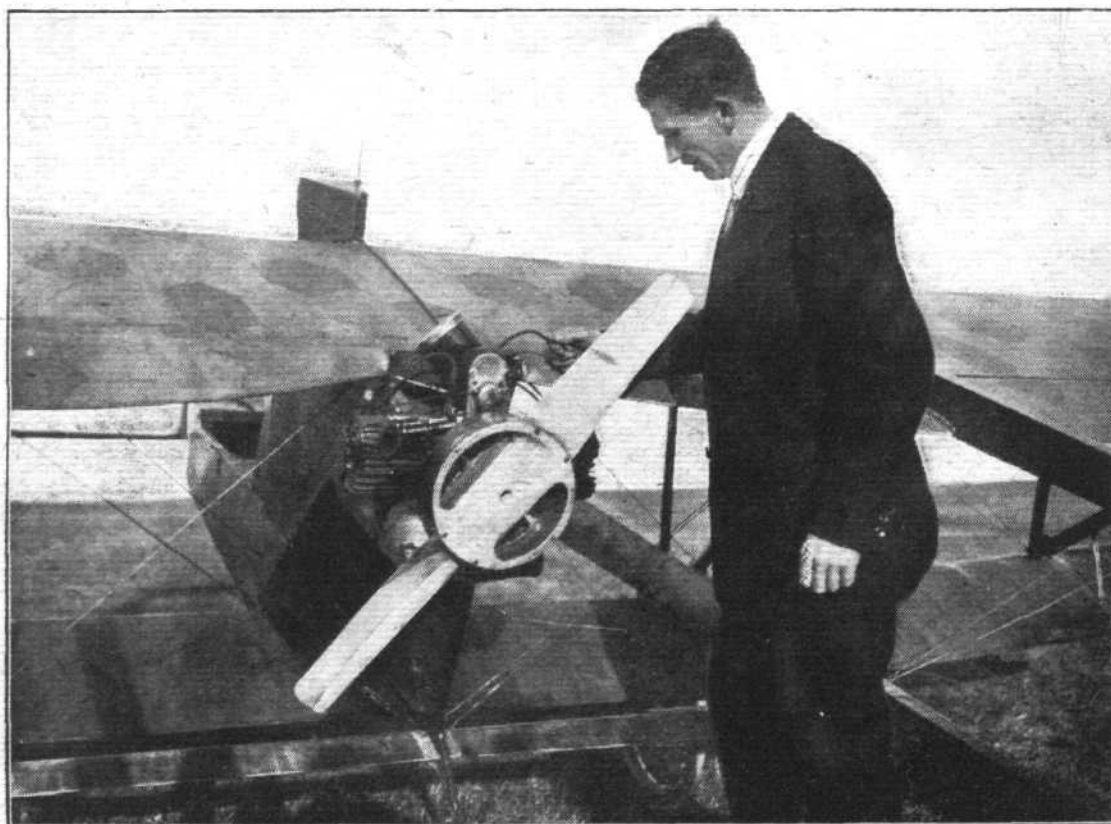
opportunity of congratulating Flight-Lieut. Balfour and those associated with him on their enterprise, and express the hope that they will be rewarded by a great deal of amusement and instruction. By taking up gliding in this manner, officers of the R.A.F. can do a very great deal towards further popularising the new sport, and we trust that other stations will follow this example.

inasmuch as the bracing is of the biplane form, but the lower wing is of very narrow chord. Long box section outriggers carry the rudders and elevator at the back, while in front they support a front elevator and a leading plane whose function is stated to be to give automatic longitudinal stability. How this is accomplished, does not emerge, but the photographs indicate that there is some form of concertina



The front plane of the Budig glider has a "concertina" arrangement which is stated to be designed with a view to giving longitudinal stability. It is difficult, from the illustration, to make out exactly what this arrangement is supposed to do.

The Budig glider is fitted with a small B.M.W. motor-cycle engine of 4 h.p. The peculiar propeller is, no doubt, a result of the designer having had to mount it on the flywheel of the engine.



AMONG the gliders entered for the German gliding competition in the Rhön, in 1921, was a peculiar "tail-first" biplane, or "one-and-a-half plane," designed by Herr F. Budig. For some reason, not known to us, the machine does not appear to have accomplished much, and in last year's competition nothing was heard of it. It now appears that the Budig machine has come to life again, this time as a low-power aeroplane, or glider with auxiliary engine.

arrangement enclosing a space under the plane. One of the photographs shows the designer, Herr Budig, depressing one corner of the leading plane, in order, no doubt, to demonstrate the arrangement.

* * *

THE small narrow plane behind the leading plane appears to be a front elevator, and to be connected up with the rear elevator, but the leading plane is obviously to some extent independent of the longitudinal control. The pilot sits in front of the planes, and a fairing has been added between the planes.

IN the accompanying photographs the main features of the Budig glider are well shown. The machine is a "sesquiplan,"

THE engine used is a B.M.W. motor-cycle air-cooled two-cylinder opposed, driving a pusher airscrew of very small diameter. The peculiar shape of the propeller boss is, no doubt, caused by the fact that the engine had no proper hub, and that consequently the propeller had to be attached direct to the flywheel.

BUT little information is available regarding the performance of the Budig glider under power, but it appears that the engine is barely powerful enough to get the machine off the ground, and that the usual catapult-starting method is employed. Once in the air, the machine should be able to fly horizontally, or even climb slowly, as the engine is stated to develop 4 h.p. With direct drive, however, the propeller efficiency is probably not very high, and as the machine appears to have a fair amount of head resistance it may be

doubtful if there is any surplus of power sufficient for anything but the slowest of climbs. It may even be that the machine merely does a prolonged glide.

NEVERTHELESS, in view of the fact that this is probably the first glider with auxiliary engine to fly, we have thought that the photographs might not be without interest, as the type is one which is sure to be developed during the next few months. Small engines suitable for the purpose are now being developed, both in Germany and France, and although, as far as we know, no British engine has yet been produced especially for gliders, we have in mind one or two which could probably be modified to suit at any rate experimental machines, of which more than one are under consideration.

LONDON TERMINAL AERODROME

Monday, January 1, 1923

ALTHOUGH the entire British air service was shut down over Christmas, the French air lines sent one or two machines between London and Paris, and gave the skeleton staff at the aerodrome something to do. But, apart from this, and a little joy-riding by the Surrey Flying Services, the air-station

at times it was impossible to see the opposite side of the aerodrome, it would have been an extremely good performance for one of the regular pilots to have got through—which means that it would have been an almost superhuman task for a man who did not know the route. However, at 1.40 p.m. the machine was observed circling Lympne, and



THE NEW FOKKER F.5 : This machine has seating accommodation for eight passengers, and a feature of the design is that the lower plane can be removed in a few minutes, thus turning the machine into a parasol monoplane. The engine is a Rolls-Royce "Eagle."

had a deserted appearance throughout the holidays. It woke to life again, however, on Wednesday, when there were 33 air travellers—quite a gratifying number for the day following the holidays. Many of the foreign pilots had to spend Christmas in the Trust House, and Mr. Lloyd's efforts to make the festivities as homely as possible were very successful.

Today, New Year's Day, being a national holiday in Holland, both the Daimler Airway and the Royal Dutch Air Service cancelled the running of their machines to and from Holland; but all other services are running as usual.

German Air Visit to London

A DORNIER 180 h.p. all-metal monoplane, piloted by Herr Kahlow, and carrying as passengers three directors of the Aero-Lloyd German air combine, has flown from Berlin to England during the week. This is the first German commercial aeroplane to arrive in England, and the affair is causing considerable interest. On Saturday, a message was received to the effect that the machine had left Amsterdam for London at 9.55 a.m., and it was not until late in the afternoon that another message was received that the machine had landed at Rotterdam and was staying there the night. There was a big gale blowing up the coast of Holland, and it appears that, after flying for 2 hrs. 10 mins., the Dornier was compelled to alight at Rotterdam, being unable to make headway against the gale.

Another start was made on Sunday at 10.36 a.m. The weather at Croydon was very bad. In fact, rain had been falling practically continuously since 7 p.m. the previous evening, and the clouds over the hills were within a few feet of the tops. With the visibility at Croydon so low that

as the pilot was encircling in the neighbourhood for nearly 10 mins., it was apparent that he was unable to find the aerodrome, and he finally alighted at Aldington, about 4 miles west of Lympne. Major Woods Humphreys and Dr. Hemming—of the German Embassy—immediately set out in one of the Daimler cars to take the visitors into Folkestone, where they were entertained for New Year's Eve at the Grand Hotel.

Continuing its flight today (Monday), the Dornier alighted at the air-station at 11.30 a.m. this morning.

[A description of this Dornier machine appeared in *FLIGHT* for March 31, 1921.—ED.]

The machine, as I have mentioned, came down on Sunday near Lympne, and a local farmer, very hospitable, invited them in to 5 o'clock tea, and insisted that the pilot and mechanic should sleep at his farm overnight in order that they should be conveniently near their machine.

These German directors of the Aero-Lloyd have, one should mention, come to London to visit the Daimler Airway, in order to make final arrangements for the running of the London-Berlin airway in the spring.

During the early part of the week, the pilots flying on the airways had a remarkable view of the floods which were prevalent throughout the country. Some of the Dutch pilots said that in Kent new rivers had sprung up, and one of them was so confused by the difference in the appearance of the landscape that he had considerable difficulty in finding his way to Croydon. In the north, the pilots of the Daimler air service between London and Manchester reported that big tracts of country were under water, and at times, it was almost like flying over an inland sea.

NOTICES TO AIRMEN

Radio Services in Connection with Civil Air Routes

1. THE information relating to Radio services in connection with civil aviation which has hitherto been contained in a number of separate Notices to Airmen is, in Notice No. 138 of 1922, consolidated and brought up-to-date.

2. All previous Notices to Airmen relating to Radio services are, therefore, cancelled. These Notices are:—

1920.—No. 111, para. 2.

1921.—Nos. 21, 40, 69, 100, 107 and 111.

1922.—Nos. 3, 43, 46, 50, 54, 65, 68, 88, 94, 105 and 122.

3. In order to facilitate reference, the subject has been divided into three parts, as follows:—

Part I.—Radio Telephony: Organisation and Procedure.—This part relates to the system of R/T communication on recognised air routes under British control.

Part II.—Wireless Direction Finding Services: British Isles, France, Germany and Italy.—Containing particulars of the stations available and the procedure to be employed with both R/T and W/T.

Part III.—W/T Stations in operation in connection with Civil Air Routes.—In this part a full list is given of the W/T stations directly concerned with flying operations in Great Britain, Belgium, France and Holland.

4. Strict adherence to the radio organisation described in this Notice affords the best possible means for the efficient control of air traffic and for ensuring the safety of aircraft and passengers, and bearings taken by D.F. stations can be assumed to be of a high degree of accuracy, but it must be clearly understood that the Air Ministry, while taking every reasonable precaution to ensure the efficient working of the radio services of all classes mentioned in this Notice,

accept no responsibility for any consequences arising directly or indirectly from the use of these services, from any inaccuracy of bearings or information given, from any failure in the services or from any other cause whatsoever.

Copies of this Notice can be obtained from the Air Ministry. (No. 138 of 1922.)

Holland: Rotterdam (Waalhaven) Aerodrome

1. **Rotterdam.**—(a) **Night-landing arrangements.**—Nine ground lights have been established in the centre of the landing ground, eight of which are arranged at equal distances apart, in the form of a circle with a diameter of 80 metres, the ninth light being in the centre of the circle.

In accordance with the direction of the wind, five of the said lights are lighted in the form of a landing "T."

Landing must be effected in the direction of the long arm of the "T," towards the short arm.

The ground lights, also the obstruction lights (red lights on the chimney in the N.E. corner and other high points), will only be lit when an aircraft is expected, or on request.

(b) **Obstructions, etc.**—A fence 2.20 metres (7 ft.) in height has been erected along the east side and along the major part of the south and north sides of the aerodrome.

In order that this fence may be clearly visible from the air, the top is made of horizontal white planks placed end to end along it.

The exhibition buildings erected for the I.C.A.R. (International Concours Aviation Rotterdam) have been demolished, with the exception of the sheds south of the row of hangars.

Landing is no longer restricted to any part of the aerodrome. (No. 141 of 1922.)

THE LONDON-CONTINENTAL SERVICES

FLIGHTS BETWEEN DECEMBER 17 AND DECEMBER 30, INCLUSIVE

Route (including certain diverted journeys)	No. of flights*	No. of passengers	No. of flights carrying		No. of journeys completed†	Average flying time	Fastest time made by	Type and (in brackets) Number of each type flying
			Mails	Goods				
Croydon-Paris ...	20	90	8	19	16	h. m. 3 17	H.P.W.8BG-EBBG (2h. 28m.)	B. (1), G. (9), H.P.W.8B. (3).
Paris-Croydon ...	19	58	4	18	17	2 53	H.P.W.8B G-EBBI (2h. 28m.)	B. (1), G. (9), H.P.W.8B. (3).
Croydon-Brussels- Cologne	10	38	9	—	8	3 38	D.H. 18 G-EAWW (3h. 9m.)	D.H. 4 (1), D.H. 18 (1), D.H. 34 (3).
Cologne-Brussels- Croydon	8	22	7	—	6	5 20	D.H. 34 G-EBBR (4h. 51m.)	D.H. 4 (1), D.H. 18 (1), D.H. 34 (3).
Croydon-Rotterdam ...	8	12	8	8	8	2 4	Fokker H-NABJ (1h. 46m.)	F. (6).
Rotterdam-Croydon ...	9	14	9	9	8	3 29	Fokker H-NABJ (2h. 55m.)	F. (6).
Manchester-Croydon- Amsterdam	10†	46	—	2	10	5 0	D.H. 34 G-EBBY (4h. 35m.)	D.H. 34 (3).
Amsterdam-Croydon- Manchester	14§	22	5	2	14	—	—	D.H. 34 (3).
Total for two weeks ...	98	302	50	58	87			

* Not including "private" flights.

† Man.-Croy. 4, Croy.-A'dam. 1.

‡ Including certain journeys when stops were made en route.

§ A'dam.-Croy. 5, Croy.-Man. 9.

Av. = Avro. B. = Breguet. Br. = Bristol. Bt. = B.A.T. D.H.4 = De Havilland 4, D.H.9 (etc.).
F. = Fokker. Fa. = Farman F.50. G. = Goliath Farman. H.P. = Handley Page. M. = Martinsyde. Sp. = Spad.
Vi. = Vickers Vimy. Vu. = Vickers Vulcan. W. = Westland.

The following is a list of firms running services between London and Paris, Brussels, etc., etc.:—Co. des Grander Expresses Aériennes; Daimler Hire, Ltd.; Handley Page Transport, Ltd.; Instone Air Line; Koninklijke Luchtvaart Maatschappij; Messageries Aériennes.

R.A.F. Sports

The R.A.F. Sports Board announce the following arrangements for January, 1923:—Saturday, 6th, Rugby, R.A.F. v. Leicester at Leicester. Wednesday, 10th, Rugby, R.A.F. v. Guy's Hospital, at Honor Oak Park. Wednesday, 17th, Fencing, R.A.F. v. R.N., at Portsmouth. Saturday, 20th to Saturday, 27th, Association, R.A.F. Memorial Fund Week. Wednesday, 24th, Fencing, R.A.F. v. Cambridge University, at Uxbridge. Wednesday, 31st, Hockey, R.A.F. v. R.E., at Uxbridge.

Air Mails in Australia

From Hudson Fysh, Chief Pilot of the Queensland and Northern Territory Aerial Services, Ltd., comes a letter, sent from Cloncurry by the first trip of Australia's second aerial mail service. The "cover," to use a philatelic term, bears a label printed in red, inscribed "For Aerial Trans- mission. First Trip Australia's Second Aerial Mail," and has, in addition the current 5d. Australia brown postage stamp, postmarked "Cloncurry. 5-A-11-1922. Queens- land." But why not have a proper Aerial Mail stamp?

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The undermentioned appointments in the Royal Air Force are notified:—

Air Commodores L. E. O. Charlton, C.B., C.M.G., D.S.O., from No. 7 Group Headquarters (Inland Area) to R.A.F. Depot (Inland Area). (Supernumerary.) 1.1.23. E. A. D. Masterman, C.M.G., C.B.E., A.F.C., from Central Flying School (Inland Area) to command No. 7 Group Headquarters (Inland Area). 1.1.23.

Group Captain F. V. Holt, C.M.G., D.S.O., from R.A.F. Depot (Inland Area) to command Central Flying School (Inland Area). 1.1.23.

Wing Commanders L. A. Pattinson, D.S.O., M.C., D.F.C., from R.A.F. Depot (Inland Area) to Headquarters, R.A.F., Cranwell. 22.12.22. H. A. Treadgold, M.D., B.A., from R.A.F. Depot (Inland Area) to Headquarters, Iraq Command. 13.12.22.

Squadron Leaders G. Blatherwick, from No. 1 School of Technical Training (Boys) (Halton) to command No. 2 Armoured Car Company (Middle East). 13.12.22. D. G. Donald, D.F.C., A.F.C., from R.A.F. Base, Gosport (No. 3 Squadron) (Coastal Area) to Air Ministry (Dept. of C.A.S.) (D.T. and S.D.). 15.1.23. E. J. Hodson, from Air Ministry (Dept. of C.A.S.) (D.T. and S.D.) to R.A.F. Depot (Inland Area). (Supernumerary.) 22.1.23. J. Rothwell, M.B., from R.A.F. Depot (Inland Area) to School of Technical Training (Men) (Inland Area). 5.1.23. (Substituted for the second entry of the notification concerning this officer which appeared in R.A.F. Bulletin No. 94, dated 20.12.22.) R. W. Ryan, M.B. (The notification which appeared in R.A.F. Bulletin No. 94, dated 20.12.22, wherein this officer was posted from R.A.F. Hospital, Cranwell, to School of Technical Training (Men), with effect from 8.1.23, is hereby cancelled.) J. H. Porter, M.C., M.B., from R.A.F. Depot (Inland Area) to Headquarters, Iraq Command. (Supernumerary.) 13.12.22. C. G. Tucker, from Headquarters, Iraq Command to Aircraft Depot (India). 19.11.22.

Flight Lieutenants R. E. G. Fulljames, M.C., from R.A.F. Depot (Inland Area) to Headquarters, R.A.F. India. 13.12.22. C. H. Moore, from R.A.F. Depot (Inland Area) to No. 4 Flying Training School (Middle East). 13.12.22.

C. R. Richardson, from R.A.F. Depot (Inland Area) to No. 1 School of Technical Training (Boys) (Halton). 18.12.22. A. J. M. Ross, M.B.E., from R.A.F. Depot (Inland Area) to Headquarters, R.A.F. Mediterranean. 13.12.22. F. E. J. Coates, from No. 4 Stores Depot to No. 1 Stores Depot. 18.12.22. H. Steele, from No. 1 Stores Depot to No. 1 School of Technical Training (Boys) (Halton). 29.12.22. J. A. Perdrau, M.D., from School of Technical Training (Men) (Inland Area) to R.A.F. Depot (Inland Area). 9.1.23. (Substituted for the notification which appeared in R.A.F. Bulletin No. 94, dated 20.12.22, wherein this officer was posted as stated above, with effect from 12.1.23.) E. V. Longinotto, A.F.C., to Air Ministry (D. of P.). 10.4.22. J. R. Crolius, M.B., from R.A.F. Depot (Inland Area) to Headquarters, R.A.F. (Middle East). (Supernumerary.) 13.12.22. H. J. Higgins, from School of Technical Training (Men) (Inland Area) to Headquarters, Iraq Command. (Supernumerary.) 13.12.22. C. W. Mackey, from No. 8 Squadron (Iraq Command) to command C. and M. Party, Moascar (Middle East). 5.11.22. T. E. Salt, A.F.C., from No. 216 Squadron (Middle East) to No. 4 Flying Training School (Middle East). 11.12.22. E. P. Hardman, D.F.C., from No. 84 Squadron (Iraq Command) to No. 1 Armoured Car Company (Palestine Command). 5.11.22. C. E. V. Porter, from No. 84 Squadron (Iraq Command) to No. 1 Armoured Car Company (Palestine Command). 5.11.22. G. E. Wilson, from No. 4 Flying Training School (Middle East) to No. 47 Squadron (Middle East). 12.12.22. J. A. W. Binnie, from No. 47 Squadron (Middle East) to No. 4 Flying Training School (Middle East). 12.12.22. H. L. Crichton, M.B.E., from Headquarters (Iraq Command) to Stores Depot, Egypt (Middle East). 5.11.22. L. A. Lavender, from Aircraft Depot (Iraq Command) to Stores Depot, Egypt (Middle East). 5.11.22. C. M. Jones, M.A., from Central Medical Board (Coastal Area) to Baghdad Combined Hospital (Iraq Command). 13.12.22. R. G. J. McCullagh, from R.A.F. Depot (Inland Area) to Headquarters (Iraq Command). (Supernumerary.) 13.12.22. D. H. W. Williamson, from Electrical and Wireless School (Inland Area) to Headquarters (Iraq Command). (Supernumerary.) 13.12.22.



A Year's Work on the Aeromarine Airways

SOME interesting figures are to hand on the work carried out on the Aeromarine Airways for the year ending November 1, last. On the Southern Division, which includes Key West-Havana, Miami, Bimini, Nascau and Palm Beach, and special flights from New York to points in Florida and Cuba, 268,535 passenger miles were flown in 744 flights, and 2,399 passengers carried. On the New York Division (New York-Atlantic City, New York-New England, and New York "Sightseeing"), 57,658 passenger miles were flown in 807 flights, and 2,380 passengers carried. For the Great Lakes Division, including a double daily service between Cleveland and Detroit, sightseeing flights over lakes Erie and St. Clair, and certain special flights, 412,854 passenger miles were flown in 574 flights, and 4,388 passengers carried. Three types of flying boats were used in these operations—"F-5-L" type 11-passenger cabin boats; 6-seater converted Navy Coast Patrol "HS2L" type; and 3-seater Aeromarine boats. Not a single passenger or employé was injured during these operations, and the grand totals are as follows:—Passengers carried, 9,107; passenger miles flown, 739,047; number of flights made, 2,125. An Aeromarine Airport has just been opened at San Juan, Porto Rico, and in January a line will be established between this port and Kingston, Jamaica, connecting with Key West and Havana. It is expected that several new routes will be opened during the new year. Those now under consideration are: New York

to Southampton, Newport, Providence and Boston; and on Lake Michigan out of Chicago.

Sadi Lecointe at it Again

ON December 31 last year, at Istres, Sadi Lecointe, flying a Nieuport sesquiplan, improved on his previous record flight of 212 m.p.h., by making an average speed over the four one-kilometre laps of 348.028 km.p.h. (216.26 m.p.h.). His fastest lap was the second, when he achieved a speed of 360 km.p.h. (223.7 m.p.h.).

Martlesham Heath Reunion Dinner

THE third Annual Reunion Dinner for past and present members of Martlesham Heath will be held in London on Friday, January 26, next. Further details will be published later. Will any old member of the Station who intends being present kindly notify Captain P. G. Robinson, "C" Flight, R.A.E., Farnborough, Hants.?

The King's Cup Air Race.

THE Royal Aero Club has received notification from His Majesty the King that he will present another Cup for a race around Britain this year. It is understood that the new Cup will be a Challenge Cup, to be competed for annually. In view of the great success of the King's Cup race last year, it is to be hoped that this year's contest will see an even larger list of entries, as such a race, during which competing machines are seen by millions of people, does a tremendous amount of good in arousing public interest in aviation.



Two Views of Marconi's Wireless Telegraph Works at Chelmsford, taken from the Company's Avro biplane, which is used for experimental work.

PERSONALS

Married

Lieut. HENRY E. POWER, 1st East Surrey Regt., attached R.A.F., son of the late Hugh Alex. Power and of Mrs. Power, of 10, Dunsford Place, Bath, was married on December 14, at All Saints', Cairo, to MARIA JOHANNA, daughter of Mr. and Mrs. EMILE VAN KONYNENBURG, of The Hague.

Items

Major NOBILE CARLO M. GRAZIANI, M.C., Air Attaché to the Italian Embassy, left London on December 29, for the Continent, on leave.

We are advised by R. P. Wilson, Esq., C.B.E., M.I.C.E., M.I.E.E., that he has resigned his position as Director of Aircraft Supplies at the Air Ministry, as from the 31st ult., and will now continue his practice as Consulting Engineer—previously carried out at 66, Victoria Street—at Central House, Kingsway, W.C. 2.



A Happy "Family" Gathering

CHRISTMAS EVE at the Cricklewood works of S. Smith and Sons (M.A.), Ltd., the well-known manufacturers of aviation and motor accessories, has always been devoted to merry-making and a time for real social intercourse between the management and the workers. This year, however, marked a still greater development in the social side of Smith's (M.A.).

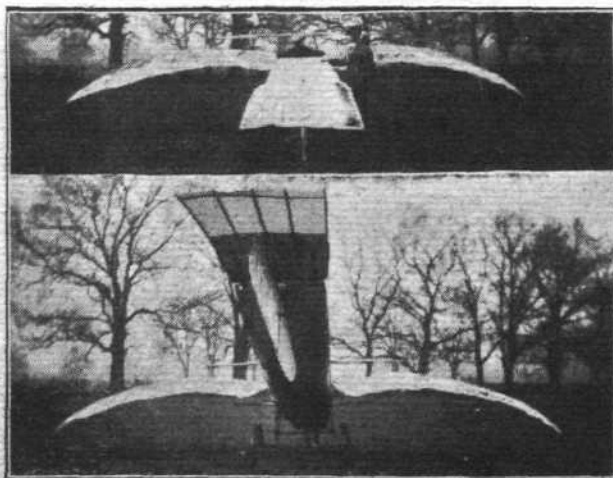
The whole of Friday afternoon, December 22, was devoted to a children's party given to the children of all the workers in the factory; altogether over 350 children were entertained to tea, followed by "Punch and Judy," and a very fine Marionette Show, while the orchestra played selections the whole afternoon.

A huge Xmas tree, loaded with presents, and lit by a number of Smith Inspection Lamps, was erected in the centre of the large canteen, the rôle of Father Christmas being taken by Mr. B. Haviland, the works manager. Each child was presented with two or three presents from the tree, and before leaving received the usual oranges, nuts and a balloon.

Mr. Gordon Smith, managing director, was present, together with the directors and departmental heads, and all joined very heartily in the fun, truly demonstrating the spirit of goodwill and understanding that exists throughout the Smith organisation.

The whole of the expenses were borne by the directors, management and staff of the factory and sales department. Great credit is due to the genial Sports Secretary—Mr. E. G. Peskett—and members of the Organising Committee in making the whole day a complete success. Mention must also be made of Miss Wilson, who is manageress of the canteen, and organised the catering arrangements in a very thorough and businesslike way.

At 6 p.m. the children's party finished, and the evening was given over to a social and dance. A number of musical turns were provided, and the evening closed with cheers for the organisers and for those responsible financially for the success of the function.



M. PASSAT'S EXPERIMENTAL GLIDER: M. Passat, well-known to many of our readers in connection with his "orthopter" experiments, is testing a new theory—in which movable wings and a variable "c.g." play main parts—with the aid of the glider shown above at Wimbledon. We hope to have something more to say on this subject later on.

A Display of Air Mail Stamps

In connection with the Annual General Meeting of the Herts Philatelic Society, which will be held at Pagani's Restaurant, Great Portland Street, W. 1, on January 16 at 5.45, Mr. H. L. Hayman will give a display of aero stamps and some rare covers. Aero stamps now form an important section of Philately, and Mr. Hayman has, we believe, some very interesting specimens in his collection. After the display, dinner will be served at 7.45 p.m., cards for which for members and their guests can be obtained (4s. 6d. each) from the Secretary, W. M. Holman, 101, Ladbroke Grove, W. 11.



PUBLICATIONS RECEIVED

Aerodynamik. By Prof. Dr. Richard Fushs and Prof. Dr. Ludwig Hopf. Richard Carl Schmidt and Co., Berlin, W. 62.

Department of Overseas Trade. Report on the Economic and Financial Conditions in Brazil, September, 1922. By R. Hambloch. London: H.M. Stationery Office, Kingsway, W.C. 2. Price 1s. 9d. net. By post 1s. 10½d.

Report on the Economic and Financial Situation of Australia, revised to October, 1922. By S. W. B. McGregor. London: H.M. Stationery Office, Kingsway, W.C. 2. Price 2s. 6d. net. By post 2s. 8d.

Survey of the Economic and Commercial Conditions in Algeria, Tunis and Morocco, 1921-22. London: H.M. Stationery Office, Kingsway, W.C. 2. Price 3s. 9d. net. By post 3s. 11½d.

Illustrated Calendar, 1923. Daimler Hire, Ltd., 243, Knightsbridge, London, S.W. 7.

The Magnetic Compass in Aircraft. Air Ministry (Directorate of Research). London: H.M. Stationery Office, Kingsway, W.C. 2. Price 2s. net. By post 2s. 1½d.



AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: cyl. = cylinder; I.C. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

APPLIED FOR IN 1921

Published January 4, 1923

- 25,532. LUFTSCHIFFBAU ZEPPELIN GES. and P. JARAY. Aircraft sheds. (182,078.)
26,489. LUFTSCHIFFBAU ZEPPELIN GES. Aircraft sheds. (182,752.)
31,988. J. M. LEMIEUX. Screw propellers. (176,756.)

APPLIED FOR IN 1922

Published January 4, 1923

502. H. N. ATWOOD. Composite laminated structures. (190,031.)
6,649. SKYWING AIRCRAFT CORPORATION. Ignition devices. (181,724.)

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